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Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number Docket Number (Optional) PRE-APPEAL BRIEF REQUEST FOR REVIEW 5486-US-PA Filed Application Number I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to all Stop AF, Commissioner for 2002-09-17 10065091 Patents, P.O. Box 1450, Alexandria, VA 22313-1450 [37 CFR 1.8(a)] First Named Inventor Fang-Chen Luo Signature. Examiner Art Unit RUDE, TIMOTHY L. Typed or printed 2871 name. Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request. This request is being filed with a notice of appeal. The review is requested for the reason(s) stated on the attached sheet(s). Note: No more than five (5) pages may be provided. I am the applicant/inventor. assignee of record of the entire interest. Belinda Lee See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. Typed or printed name (Form PTO/SB/96) 011-886-2-2369-2800 attorney or agent of record. Registration number _ Telephone number attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34 NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

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the Atomic Energy Act (42 U.S.C. 218(c)).

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Customer No.: 31561 Application No.: 10/065091 Docket No.: 5486-US-PA

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner: Rude, Timothy L.

Group Art Unit: 2871

In re PATENT APPLICATION of
Applicants: Luo et al.
)

Serial No.: 10/065,091
)

Filed: September 17, 2002
)

For: LIQUID CRYSTAL DISPLAY
STRUCTURE
) Attorney Docket: 5486-US-PA

No fee is believed to be due. However, the Commissioner is authorized to charge any fees required in connection with the filing of this paper to account No. 50-2620 (Order No.: 5486-US-PA)

ARGUMENTS IN SUPPORT OF PRE-APPEAL BRIEF REQUEST FOR REVIEW

United States Patent and Trademark Office Customer Service Window Mail Stop AF Randolph Building 401 Dulany Street Alexandria, VA 22314

Dear Sir,

In connection with the Notice of Appeal to the Board of Patent Appeals and Interferences from the Final Rejection dated December 11, 2008, and the Pre-Appeal Brief Request for Review concurrently filed herewith, Applicants hereby submit arguments in support of such Request.

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ARGUMENTS

This application was subjected to a Final Rejection on December 11, 2008, wherein claims

56-59 and 62-67 were rejected under 35 U.S.C. 103(a) as being unpatentable over Tanada et al

(US 2002/0054257) in view of Nakai et al. (US 4,257,832), and claims 56-59 and 62-67 were

rejected under 35 U.S.C. 103(a) as being unpatentable over Tanada in view of Ogawa et al. (US

6,122,027) and further in view of Nakai. In response to the Non-Final Rejection dated June 13,

2008, Applicants filed on May 6, 2008 amendments and the following remarks for explaining the

non-obviousness of claims 56-59 and 62-67.

Features of the currently pending independent claim 56/67 include: 1) that <u>a planar color</u>

filter layer over the conformal reflective layer, wherein planar color filter layer has a

substantially planar upper surface and a (bumpy) bottom surface that conformably and fully

covers the conformal reflective layer; and 2) that a first transparent conductive layer

conformably and directly on the planar color filter layer, wherein the first transparent

conductive layer is connected to a thin film transistor for controlling the liquid crystal layer and

the conformal reflective layer is electrically isolated from the first transparent conductive layer.

Tanada in view of Nakai or Tanada in view of Ogawa and further in view of Nakai fails to

disclose the feature 1 or 2. As shown in Fig. 1 of Tanada and described in related paragraphs

[0035] to [0038], at the liquid crystal layer 30 side of the first substrate 10, an organic film 11 for

corrugating a reflection film 12, a metallic reflection film 12 for reflecting light entering the

liquid crystal display, color filters 13 for performing color display, an overcoat film 14 for

protecting the organic film 11 and the metallic reflection film 12 as well as for planarizing

the corrugation due to the organic film 11 and the color filters 13, electrode layers 15....are

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deposited in that order. In brief, Tanada teaches that <u>an overcoat film 14</u> is formed on color

filters 13 for planarizing the corrugation due to the organic film 11 and the color filters 13.

Tanada also teaches that the electrode layers 15 are deposited directly on the overcoat film 14

and not on the color filters 13.

It is also noted that Nakai was relied on to teach the feature of a TFT, and Nakai also fails to

disclose features 1 and 2 in claim 56. As shown in Figure 8, Ogawa teaches a gate insulating

film 133 with a planar top surface is formed on the reflective films 102 and color filters 103a-

103c and black matrixes 131a-131c are formed on the gate insulating film 133. In brief, color

filters 103a-103c of Ogawa are formed with a planar bottom surface and a planar top surface.

Ogawa further discloses that in order to improve smoothness and increase insulating effect,

a protecting layer may be laid between the color filters 103 and the first transparent

electrodes 105 (col. 9, ln. 20).

Against the above features 1-2 and Applicants' arguments, Examiner argued:

a. The color filter layer comprising overcoat layer of Tanada does completely cover the

formal reflective layer. Color filter layers in the art have long comprised clear regions,

planarization portions and opaque (black mask) regions. The applied prior art color filter layer

reasonably reads on Applicant's present broad claim limitations.

b. Ogawa teaches a display having color filters that do not comprise an overcoat layer.

This proves the overcoat layer of Tanada was known to be not essential to such a reflective color

filter display, which makes it obvious that the overcoat layer is optional.

c. It has long been well known in the art that color filters planarize (form planar top

surfaces despite non-planar bottom surface); deliberate process steps are needed to force such

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surfaces to be non-planar.

Applicants submit that the argument a by the Office is unreasonable for the following

reasons. One skilled in art may consider a color filter substrate be comprised of a color filter

layer, a black matrix, and possibly an overcoat layer. A skilled artesian will not consider a color

filter layer be comprised of a color filter layer, the black matrix, and an overcoat layer. Even

according to the teachings of the references cited by the Office, both Tanada and Ogawa consider

the color filter layer being just the color filter layer itself and not including an overcoat layer. In

fact, Tanada and Ogawa specifically teach forming an overcoat layer to improve smoothness and

increase of insulation of the color filter layer. According to the definition of Wikipedia, as

presented in the Response dated September 12, 2008, a color filter layer is a transparent colored

material that is used in theatre, event production, photograph, videography and cinematograph to

color light and for color correction. Hence, even by the broadest interpretation, a color filter

layer could not be construed to include an overcoat layer or a black matrix, and none of the cited

reference teaches or suggests a color filter layer with a planar top surface and a non-planar

bottom surface, and a transparent conductive layer directly on the planar color filter layer.

Applicants submit that the argument b by the Office is unreasonable for the following

reasons. Ogawa does not teach color filters having a non-planar bottom surface. Instead, Ogawa

teaches color filters having a planar bottom surface. Hence, the top surface of the color filters

could be correspondingly planar. Even so, Ogawa still teaches the application of "a protection

layer be laid between the color filters 103 and the transparent electrodes 105..." (col. 9, ln. 20-

23). Hence, the Office errs in concluding that the overcoat layer of Tanada is "optional" based

on the teachings of Ogawa. The present invention teaches a color filter layer formed with a non-

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planar (bumpy) bottom surface but with a planar upper surface and an overcoat layer is

obviated.

Applicants submit that the argument c by the Office is unreasonable for the reasons below.

The Office errs in concluding that the top surface of color filters are naturally planarized even the

bottom surface is non-planar and deliberate process steps are needed to force such surfaces to be

non-planar. In the IDS (US patent 6597421, Hatanaka et al.) submitted on Jan. 22, 2007,

Hatanaka discloses a color filter layer having a non-planar bottom surface has a corresponding

non-planar top surface and a flattened layer is provided thereton to obtain the desire planarity,

while a color filter layer having a planar bottom surface has a y planar top surface. Hence, the

conventional arts, such as Ogawa and Hatanaka, basically teach in order for a color filter layer to

have a planar top surface, either the bottom surface thereof is planar or an overcoat layer is

formed thereon.

Accordingly, Applicants still submit that because the prior references fail to disclose or

suggest any of the above features 1-2 of claim 56 and 67, claims 56, 67 and claims 57-59, 62-66

dependent therefrom are non-obvious.

pril 22. 2009

Respectfully submitted,

Date:

Belinda Lee

Registration No.: 46,863